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the detection points in the region, the detected error being used for correcting the adjustment by the surface position adjuster in the projection, and an initializing device for initializing the surface position detector in synchronism with the scan motion and the projection, at the position where the surface position detector has started the detection in the pre-scan measurement.

IN THE SPECIFICATION:

Applicants are filing a substitute specification instead of the original parent application. A marked-up copy showing the changes made thereto, is attached. Applicants' undersigned representative has reviewed the substitute specification and asserts that the substitute specification contains no new matter from the original application.

IN THE CLAIMS:

Please CANCEL claims 1-16 without prejudice to or disclaimer of the recited subject matter.

Please ADD claims 17-20 as follows:

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~~17.~~ A scanning exposure apparatus, comprising:
a projection optical system for projecting a pattern of a reticle onto an object to be exposed, wherein the object has a region in which a pattern structure is formed;
a moving system for scanningly moving the reticle and the object relative to said projection optical system, wherein the pattern of the reticle is scanningly projected onto the object in a scanningly moving state;
surface position detecting means for detecting a surface position of the object at each of plural detection points in the region, in the scanningly moving state;

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surface position adjusting means for adjusting the surface position of the object with respect to an image plane of said projection optical system, on the basis of the detection by said surface position detecting means in the projection;

control means for controlling said moving system and said surface position detecting means to perform a pre-scan measurement of the surface position of the object, prior to the projection, so as to detect an error, related to the detection through said surface position detecting means, with respect to each of the detection points, which error is attributable to a difference in pattern structure at the detection points in the region, the detected error being used for correcting the adjustment by said surface position adjusting means in the projection; and

initializing means for initializing said surface position detecting means in synchronism with the scan motion in the projection, at the position where said surface position detecting means has started the detection in the pre-scan measurement.

2. 18. An apparatus according to Claim 17, wherein said surface position detecting means performs detection in accordance with a predetermined cycle, and wherein the detection points in the projection coincide with positions detected by said surface position detecting means in the pre-scan measurement, by initializing said surface position detecting means through said initializing means.

3. 19. An apparatus according to Claim 17, wherein said surface position detecting means includes light projection means for projecting light obliquely onto the object and an accumulation type sensor for receiving reflection light from the object, and wherein said initializing means performs initialization of said surface position detecting means by resetting the accumulation start timing of said sensor.

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A device manufacturing method, comprising the steps of:

projecting a pattern of a reticle onto an object to be exposed, by use of a projection optical system, wherein the object has a region in which a pattern structure is formed;

scanningly moving the reticle and the object relative to the projection optical system, wherein the pattern of the reticle is scanningly projected onto the object in a scanningly moving state;

adjusting the surface position of the object with respect to an image plane of the projection optical system, on the basis of the surface position detection in the projection;

performing a pre-scan measurement of the surface position of the object, prior to the projection, by use of the surface position detecting means, so as to detect an error, related to the detection through the surface position detecting means, with respect to each of the detection points, which error is attributable to a difference in pattern structure at the detection points in the region, the detected error being used for correcting the adjustment in the projection;

initializing the surface position detecting means in synchronism with the scan motion in the projection, at a position where the surface position detecting means has started the detection in the pre-scan measurement; and

processing the object having the reticle pattern projected thereon, so as to form a circuit pattern thereon.

REMARKS

This application is a divisional of copending Application No. 09/904,867, filed August 1, 1997.

In accordance with preferred practice, a substitute specification and a new Abstract are presented. No new matter has been added.